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EXAMINER

TOWFIGHI, AFSHAWN M

ART UNIT

PAPER NUMBER

2458

NOTIFICATION DATE

DELIVERY MODE

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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DETAILED ACTION

Claims 1-24 & 26-50 are pending.

Claims 45-50 are new.

Response to Arguments

3. Applicant's arguments with respect to 35 U.S.C. 112 rejections have been fully considered and are persuasive. The 112 rejections of claims 14 and 43 have been withdrawn.

4. Applicant's arguments filed with respect to claims 1-24 and 26-50 have been fully considered but they are not persuasive.

On page 14 of the applicants arguments the applicant argues that the cited text in Bauer neither discloses nor suggests "the controlling means being arranged...to calculate a high watermark value and a low watermark value in response to the received parameter data and radio link resources data" as recited in claim 1.

The examiner respectfully disagrees with the applicant's arguments. Bauer [0018] teaches that an upper and lower timeslot trigger is used to detect queue length. If the queue length falls (because of more or less received data) then the system detects this, and adjusts the queue accordingly. The "detecting if the queue length is above or below a trigger" is equivalent to calculating a high and low watermark value. Therefore, Bauer does teach the argued limitations.

On page 14 of the applicant's response, the applicant argues that in claim 8, Bauer fails to disclose nor suggests "parameter data pertaining to the size of the largest data frame that may be transmitted."

The examiner respectfully disagrees with the applicant's arguments. Bauer [0014] teaches that the allocation of capacity by the scheduler "pertains" to the size of the largest data frame that may be transmitted." The capacity is related to the size of data that may be transmitted by the system. Therefore, as the claim language reads, Bauer does teach the argued limitations.

On page 14 of the applicants response, the applicant argues that Bauer neither discloses nor suggests "radio link resources" include "an allocated coding scheme".

The examiner respectfully disagrees with the applicant's response. Bauer [0029] teaches that the bit rate is determined by the value in the flow control message. The flow control message is the coding scheme. While the applicant gives examples of what a coding scheme may be in the specification, the applicant does not expressly define what a coding scheme is and the examiner interprets the term to mean anything that determines how the data will be transmitted (a "scheme" for "code" transport). The flow control message therefore includes the coding scheme, and Bauer teaches the argued limitations.

On page 15 of the applicant's response, the applicant argues that neither Bauer nor Rajaraman teaches "calculate the high water value the calculated size of the largest frame and the calculated transmit rate".

The examiner respectfully disagrees with the applicant's arguments. Rajaraman Col 4 Lines 44-45 teach that the limits (watermark values) are determined based on storage and flow conditions. The combination would suggest that the storage and flow conditions would be the allocated block capacity (Bauer [0014]) and bit rate (Bauer [0029]). The limits in Rajaraman would be calculated from the previous two items. Therefore, the combination of Rajaraman and Bauer teach the argued limitations.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 50 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 50 recites a computer readable medium. It can be reasonably interpreted that the computer readable medium would include embodiments including propagation media, such as carrier waves, which fail to establish a statutory category of

Art Unit: 2458

invention. Amending the specification as well as the claim to recite "a non-transitory computer readable medium" is believed to be sufficient to overcome this rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claims 1, 2, 5-11, 14, 15, 18-21, 24, 26-27, 39-40 & 41-42, 49, 50 are rejected under 35 U.S.C. 102(a) as being anticipated by European Patent Application Publication No. EP 1133201 A1 to Bauer, et al. (Bauer).
2. Regarding claim 1, Bauer teaches an apparatus for transmitting data, the apparatus comprising: segmenting means for segmenting data into data frames (See paragraph 14, lines 1-2, and Figure 2; wherein the scheduler 26 is the segmenting means); buffering means for buffering the data frames from the segmenting means (See par. 14, line 5-7; wherein queue 36 is the buffering means); transmitting means, connected to the buffering means to receive data frames therefrom, for transmitting the data frames (See par. 14, lines 2-4; wherein scheduler 34 is the transmitting means); and controlling means (See par.'s 11 & 12; wherein PCU 18 is the controlling means) for controlling the segmenting means, the controlling means being arranged to receive parameter data from the segmenting means pertaining to the segmented data frames

Art Unit: 2458

(See par. 14, lines 1-4; wherein allocation of capacity and temporary queue, are parameter data; and Figure 2; wherein blocks scheduler (34) is part of the Control Unit (18)) and radio link resources data from the transmitting means pertaining to the transmission of data frames (See par. 21), to calculate a high watermark value (TS(u)) and a low watermark value (TS(l)) in response to the received parameter data and radio link resources data (See par. 18, lines 1-5; wherein the timeslot triggers depend on the length of the queue, and the length of the queue depends on the parameter data, i.e., allocated capacity; and par. 17, lines 2-3; wherein the Logical Link Layer (LLC) data, is the radio link resources data) corresponding to maximal and minimal numbers of data frames to be buffered in the buffering means (See par. 18, lines 1-5), and to control the segmenting means to maintain the number of data frames in the buffering means between the high and low watermark values (See par. 18, lines 1-5, and Figure 2; wherein the BVC queue (36), is the buffering means, and wherein the DL request scheduler is part of the control unit (18)).

3. Regarding claim 2, Bauer teaches the controlling means is arranged to define a high band of values including the high watermark value and a low band of values including the low watermark values (See par. 26, lines 1-3 and Figure 2; wherein TS(u) to BVC(l) is the high band of values, and TS(l) to the first block in queue 36 is the low band of values).

4. Regarding claim 5, Bauer teaches the controlling means is operable to control the transmitting means, the controlling means being arranged to generate a buffer empty signal for the transmitting means when the buffering means contains no data

Art Unit: 2458

(See par. 21, lines 5-6; wherein signaling the end of a TBF is the equivalent of the a buffer empty signal).

5. Regarding claim 6, Bauer teaches the segmenting means is arranged to transfer to the controlling means parameter data pertaining to time-out value of a retransmission timer susceptible to delay (See par. 21, line 4; wherein transmission is in accordance with GSM, thus retransmissions inherently include a time-out).

6. Regarding claim 7, Bauer teaches the controlling means is arranged to calculate a transmit delay time by multiplying the time-out value by a constant, wherein the constant has a value greater than zero and less than or equal to 0.5 (See par. 21, lines 4-6; wherein re-transmissions are only sent after a delay, and delays are increased by a multiple with each unsuccessful transmissions, as is standard in transmission protocols such as GSM).

7. Regarding claim 8, Bauer teaches the segmenting means is arranged to transfer to the controlling means parameter data pertaining to the size of the largest data frame that may be transmitted by the transmitter (See par. 14, lines 1-4; wherein allocation of capacity, includes the largest data frame that can be transmitted; and Figure 2; wherein blocks scheduler (34) is part of the Control Unit (18)).

8. Regarding claim 9, Bauer teaches the controlling means is arranged to calculate the size of the largest frame from the largest data frame that may be passed to the transmitting means for transmission (See par. 14, lines 2-4; wherein size information is included in the allocation of the capacity and the queue).

Art Unit: 2458

9. Regarding claim 10, Bauer teaches data frames may be transmitted in acknowledged and unacknowledged modes (See par.'s 14 & 15, and Figure 2 between channel (24) and queue (42); wherein a no-acknowledged mode may be used in other than normal operations), and the controlling means is arranged to calculate the size of the largest frame as the greater of the largest data frame that may be passed to the transmitting means for transmission in the acknowledged mode and the largest data frame that may be passed to the transmitting means for transmission in the unacknowledged mode (See par. 14, lines 2-4; wherein size information is included in the allocation of the capacity and the queue).

10. Regarding claim 11, Bauer teaches the radio link resources data from the transmitting means includes an allocated coding scheme and a number of allocated transmission slots for the data frames to be transmitted, and the controlling means is arranged to calculate a transmit rate from the allocated coding scheme and the number of allocated transmission slots (See par.'s 24, 26 & 29; wherein bit rate depends on coding scheme and queue length is dependent on number of allocated time slots).

11. Regarding claim 14, Bauer teaches a method of transmitting data, the method comprising: segmenting data into data frames (See paragraph 12, Figure 2, and (30)); buffering the data frames (See par. 18, line 1, Figure 2, and (36)); receiving buffered data frames; transmitting the data frames (See par. 22, lines 4-5, Figure 2, and (34)); receiving parameter data pertaining to the segmented data frames and radio link resources data pertaining to the transmission of data frames (See par. 29); calculating a high watermark value (TS(U)) and a low watermark value TS(1)) in response to the

Art Unit: 2458

received parameter data and radio link resources data (See par. 18, lines 1-5; wherein the timeslot triggers depend on the length of the queue, and the length of the queue depends on the parameter data, i.e., allocated capacity; and par. 17, lines 2-3; wherein the Logical Link Layer (LLC) data, is the radio link resources data) corresponding to maximal and minimal numbers of data frames to be buffered; and maintaining the number of buffered data frames between the high and low watermark values (See par. 5, lines 6-8, and par. 43, lines 1-2) by controlling the segmenting data into data frames by monitoring the calculated high watermark and the calculated low watermark (See par. 18, lines 1-5, and Figure 2; wherein the BVC queue (36), is the buffering means, and wherein the DL request scheduler is part of the control unit (18)).

12. Regarding claim 15, this claim recites a method for operating the apparatus of claim 2, and is rejected for at least the same reasons.

13. Regarding claim 18, the claim recites a method for operating the apparatus of claim 5, and is rejected for the same reasons.

14. Regarding claim 19, the claim recites a method for operating the apparatus of claim 6, and is rejected for the same reasons.

15. Regarding claim 20, the claim recites a method for operating the apparatus of claim 10, and is rejected for the same reasons.

16. Regarding claim 21, this claim recites a method for operating the apparatus of claim 11, as is rejected for at least the same reasons.

17. Regarding claim 24, Bauer teaches a data transmitter in which incoming data for transmission is divided into data blocks and passed in frame transmission order to a

Art Unit: 2458

radio link stage via a serial frame buffer which holds the data until the radio link is able to transmit it (See par. 5), the incoming data having associated with it various parameters and the radio link stage having allocated to it radio link resources which parameters and resources change independently of each other from time to time and are supplied to a controller (See par. 14) which calculates high and low buffer levels therefrom and controls the passing of the data frames through the frame buffer to maintain the number of frames in the buffer at any instant of time at a level between the calculated high and low levels (See par. 29).

18. Regarding claim 26, this claim recites an apparatus with the same or similar features as claim 1, and is rejected for the same reasons.

19. Regarding claim 27, this claim recites an apparatus with the same or similar features as claim 2, and is rejected for the same reasons.

20. Regarding claim 30, this claim recites an apparatus with the same or similar features as claim 5, and is rejected for the same reasons.

21. Regarding claim 31, this claim recites an apparatus with the same or similar features as claim 6, and is rejected for the same reasons.

22. Regarding claim 32, this claim recites an apparatus with the same or similar features as claim 7, and is rejected for the same reasons.

23. Regarding claim 33, this claim recites an apparatus with the same or similar features as claim 8, and is rejected for the same reasons.

24. Regarding claim 34, this claim recites an apparatus with the same or similar features as claim 8, and is rejected for the same reasons.

Art Unit: 2458

25. Regarding claim 35, this claim recites an apparatus with the same or similar features as claim 10, and is rejected for the same reasons.

26. Regarding claim 36, this claim recites an apparatus with the same or similar features as claim 11, and is rejected for the same reasons.

27. Regarding claim 39, Bauer teaches the invention as described in claim 1. Bauer further teaches the segmenting means segments the data into various length data frames in response to controls from the controlling means (See par. 16, line 2; wherein the length can be varied, as the length depends on the multi-slot capacity of the mobile station).

28. Regarding claim 40, Bauer teaches the invention as described in claim 1. Bauer further teaches the segmenting means segments the data into a maximum length data frames allowed in response to controls from the controlling means (See par. 15, line 1-2; wherein reducing volume to the mobile station, includes using the maximum length data frames allowed).

29. Regarding claim 41, Bauer teaches the invention as described in claim 14. Bauer further teaches the segmenting means segments the data into various length data frames in response to controls from the controlling means (See par. 16, line 2; wherein the length can be varied, as the length depends on the multi-slot capacity of the mobile station).

30. Regarding claim 42, Bauer teaches the invention as described in claim 14. Bauer further teaches segmenting the data into a maximum length data frames allowed (See par. 15, line 1-2; wherein reducing volume to the mobile station, includes using the

Art Unit: 2458

maximum length data frames allowed) while maintaining the number of buffered data frames between the high and low watermark values (See par. 18, lines 1-3; wherein TS(u) and TS(l), are the high and low watermark values).

31. Regarding claim 49, Bauer teaches at least one processor configured to transmit data, comprising: a first module for segmenting data into data frames (See paragraph 14, lines 1-2, and Figure 2; wherein the scheduler 26 is the segmenting means); a second module for buffering the data frames (See par. 14, line 5-7; wherein queue 36 is the buffering means); a third module for receiving buffered data frames; a fourth module for transmitting the data frames (See par. 14, lines 2-4; wherein scheduler 34 is the transmitting means); a fifth module for receiving parameter data pertaining to the segmented data frames (See par. 14, lines 1-4; wherein allocation of capacity and temporary queue, are parameter data; and Figure 2; wherein blocks scheduler (34) is part of the Control Unit (18)) and radio link resources data pertaining to the transmission of data frames (See par. 21); a sixth module for calculating a high watermark value and a low watermark value in response to the received parameter data and radio link resources data (See par. 18, lines 1-5; wherein the timeslot triggers depend on the length of the queue, and the length of the queue depends on the parameter data, i.e., allocated capacity; and par. 17, lines 2-3; wherein the Logical Link Layer (LLC) data, is the radio link resources data) corresponding to maximal and minimal numbers of data frames to be buffered (See par. 18, lines 1-5); and a seventh module for maintaining the number of buffered data frames between the high and low watermark values by

Art Unit: 2458

controlling the segmenting data into data frames by monitoring the calculated high watermark value and the calculated low watermark value (See par. 18, lines 1-5, and Figure 2; wherein the BVC queue (36), is the buffering means, and wherein the DL request scheduler is part of the control unit (18)).

32. Regarding claim 50, Bauer teaches a computer program product, comprising: a computer-readable medium comprising: a first set of parameters for causing a computer to segment data into data frames (See paragraph 14, lines 1-2, and Figure 2; wherein the scheduler 26 is the segmenting means); a second set of parameters for causing the computer to buffer the data frames (See par. 14, line 5-7; wherein queue 36 is the buffering means); a third set of parameters for causing the computer to receive buffered data frames; a fourth set of parameters for causing the computer to transmit the data frames (See par. 14, lines 2-4; wherein scheduler 34 is the transmitting means); a fifth set of parameters for causing the computer to receive parameter data pertaining to the segmented data frames (See par. 14, lines 1-4; wherein allocation of capacity and temporary queue, are parameter data; and Figure 2; wherein blocks scheduler (34) is part of the Control Unit (18)) and radio link resources data pertaining to the transmission of data frames (See par. 21); a sixth set of parameters for causing the computer to calculate a high watermark value and a low watermark value in response to the received parameter data and radio link resources data (See par. 18, lines 1-5; wherein the timeslot triggers depend on the length of the queue, and the length of the queue depends on the parameter data, i.e., allocated capacity; and par. 17, lines 2-3; wherein the Logical Link Layer (LLC) data, is the radio link resources data) corresponding to

Art Unit: 2458

maximal and minimal numbers of data frames to be buffered (See par. 18, lines 1-5); and a seventh set of parameters for causing the computer to maintain the number of buffered data frames between the high and low watermark values by controlling the segmenting data into data frames by monitoring the calculated high watermark value and the calculated low watermark value (See par. 18, lines 1-5, and Figure 2; wherein the BVC queue (36), is the buffering means, and wherein the DL request scheduler is part of the control unit (18)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

33. Claims 3, 4, 12, 13, 16, 17, 22, 23, 28, 29, 37, 38, 43 & 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer, as applied to claims 2, 11, 15, 21 & 26 above, in view of U.S. Patent No. 5,802,310 issued to Rajaraman.

34. Regarding claim 3, Bauer teaches the invention as described in claim 2. Bauer does not teach the controlling means is arranged to generate a suspend signal for the segmenting means when the number of data frames in the buffering means is in the high band. However, Rajaraman teaches this limitation (See column 4, lines 59-62). Using the feature of Rajaraman in the system of Bauer would have allowed the system

Art Unit: 2458

to not only reduce the amount of data coming in, but also stop all data from coming in, when the buffer filled to a critical level. This would have prevented the loss of data due to buffer overflow. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the teachings of Rajaraman and Bauer.

35. Regarding claim 4, Bauer teaches the invention as described in claim 2. Bauer does not teach the controlling means is arranged to generate a resume signal for the segmenting means when the number of data frames in the buffering means is in the low band. However, Rajaraman teaches this limitation (See col. 4, lines 62-64). Using the feature of Rajaraman in the system of Bauer would have allowed for the buffer to begin filling up again with data, once the buffer was emptied to a critical low level. This would have prevented wasted clock cycles, where no data was transmitted, thereby increasing efficiency. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the teachings of Rajaraman and Bauer.

36. Regarding claim 12, Bauer teaches the invention as described in claim 11. Bauer further teaches the radio link resources data from the transmitting means includes an allocated coding scheme and a number of allocated transmission slots for the data frames to be transmitted, and the controlling means is arranged to calculate a transmit rate from the allocated coding scheme and the number of allocated transmission slots (See par.'s 24, 26 & 29; wherein bit rate depends on coding scheme and queue length is dependent on number of allocated time slots). Bauer does not teach the controlling means is arranged to calculate the high watermark value from the

Art Unit: 2458

calculated size of the largest frame and the calculated transmit rate. However, Rajaraman teaches this limitation (See col. 4, lines 44-45; wherein the first queue limit is the high watermark). Using the feature of Rajaraman in the system of Bauer would have allowed for the optimal high watermark to be calculated, which would allow for optimal efficiency during data transfer. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the teachings of Rajaraman and Bauer.

37. Regarding claim 13, Bauer teaches the invention as described in claim 1. Bauer does not teach the controlling means is arranged to calculate the low watermark value as a fraction of the high watermark value. However, Rajaraman teaches the controlling means is arranged to calculate the low watermark value as a fraction of the high watermark value (See col. 5, lines 28-30; wherein the same multiple is used to set both high and low watermarks). Using the features of Rajaraman in the system of Bauer would have allowed for an optimal low watermark to be calculated, which would insure sufficient capacity for burst transmissions during data transfer. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the teachings of Rajaraman and Bauer.

38. Regarding claim 16, this claim recites a method for operating the apparatus of claim 3, and is rejected for at least the same reasons.

39. Regarding claim 17, this claim recites a method for operating the apparatus of claim 4, and is rejected for at least the same reasons.

Art Unit: 2458

40. Regarding claim 22, this claim recites a method for operating the apparatus of claim 12, and is rejected for at least the same reasons.

41. Regarding claim 23, this claim recites a method for operating the apparatus of claim 13, and is rejected for the same reasons.

42. Regarding claim 28, this claim recites an apparatus with the same or similar features as claim 3, and is rejected for the same reasons.

43. Regarding claim 29, this claim recites an apparatus with the same or similar features as claim 4, and is rejected for the same reasons.

44. Regarding claim 37, this claim recites an apparatus with the same or similar features as claim 12, and is rejected for the same reasons.

45. Regarding claim 38, this claim recites an apparatus with the same or similar features as claim 13, and is rejected for the same reasons.

46. Regarding claim 43, this claim recites an apparatus for operating the method of claim 39, and is rejected for the same reasons.

47. Regarding claim 44, this claim recites an apparatus for operating the method of claim 40, and is rejected for the same reasons.

6. Claims 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer as applied to claims 11 and 36 above, and further in view of Pecan et al (Patent No: 7,181,223), herein Pecan.

Art Unit: 2458

48. Regarding claim 45, Bauer teaches the limitations of claim 11. Bauer does not teach wherein the allocated coding scheme comprises a designation for a current resource allocation assigned by a MAC protocol. Pecen teaches a designation for a current resource allocation assigned by a MAC protocol (Pecen, Col 7 Lines 15-30, designation for allocation using MAC protocol). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Bauer with Pecen to designate allocation using MAC, because Pecen would more rapidly set up an uplink packet data transfer.

49. Regarding claim 46, Bauer teaches the limitations of claim 11. Bauer does not teach wherein the allocated coding scheme includes at least one of: a 20 octet radio link control radio block payload; a 30 octet radio link control radio block payload; a 36 octet radio link control radio block payload; or a 50 octet radio link control radio block payload. Pecen teaches the allocated coding scheme includes at least one of: a 20 octet radio link control radio block payload; a 30 octet radio link control radio block payload; a 36 octet radio link control radio block payload; or a 50 octet radio link control radio block payload (Pecen, Col 3 Lines 43-56, at least a 20 octet block is used). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Bauer with Pecen to use at least a 20 octet block payload, because Pecen would more rapidly set up an uplink packet data transfer.

50. Regarding claim 47, Bauer teaches the limitations of claim 36. Bauer does not teach wherein the allocated coding scheme comprises a designation for a current resource allocation assigned by a MAC protocol. Pecen teaches a designation for a

Art Unit: 2458

current resource allocation assigned by a MAC protocol (Pecen, Col 7 Lines 15-30, designation for allocation using MAC protocol). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Bauer with Pecan to designate allocation using MAC, because Pecan would more rapidly set up an uplink packet data transfer.

51. Regarding claim 48, Bauer teaches the limitations of claim 36. Bauer does not teach wherein the allocated coding scheme includes at least one of: a 20 octet radio link control radio block payload; a 30 octet radio link control radio block payload; a 36 octet radio link control radio block payload; or a 50 octet radio link control radio block payload. Pecan teaches the allocated coding scheme includes at least one of: a 20 octet radio link control radio block payload; a 30 octet radio link control radio block payload; a 36 octet radio link control radio block payload; or a 50 octet radio link control radio block payload (Pecan, Col 3 Lines 43-56, at least a 20 octet block is used). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Bauer with Pecan to use at least a 20 octet block payload, because Pecan would more rapidly set up an uplink packet data transfer.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2458

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AFSHAWN TOWFIGHI whose telephone number is (571)270-7296. The examiner can normally be reached on Monday - Friday 8:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph E. Avellino can be reached on (571)272-3905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2458

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. T./
Examiner, Art Unit 2458

/Joseph E. Avellino/
Supervisory Patent Examiner, Art Unit 2458